species to this substratum is by no means a simple one. In the first place, there is great need of more accurate data regarding the exact distribution of such "calcicoles" and of the exact nature and chemical reaction of the soils in which they are growing. As an example of the need of such precautions it is shown that "calcifuges" may and do occur on soils usually considered calcareous, but on account of leaching there is really no calcium in the soil in contact with the plant during its youthful and critical stages. It is further shown that complexity is added to the problem by the secondary characters usually accompanying calcareous soils, such as their comparative freedom from toxic products of decay, their usually low water-holding capacity, the more abundant development of their soil fauna, and the influence of calcium upon the absorption of other elements such as potassium.

The entire discussion is a thoughtful consideration of the various aspects of the problems concerned, and with the rather extensive bibliography is a good survey of the entire field.—GEO. D. FULLER.

Forest trees of Hokkaido, Japan.—Recognizing in the rapid changes taking place in Hokkaido a menace to the existence of its forests and its timber supplies, the government has appreciated the importance of a scientific knowledge of its trees as a basis for increased attention to forestry. As a result of the investigations thus prompted, there is being issued a most attractive set of beautifully colored plates, accompanied by descriptive text in Japanese and English.[20] The plates depict the foliage, flowers, fruit, buds, seeds, and seedling stages, one plate being devoted to each species. The three fascicles now issued include *Taxus cuspidata*, *Abies sachalinensis*, *A. Mayriana*, *A. Wilsonii*, *Picea Glehni*, *P. jezoensis*, *Larix dahurica*, *Pinus pentaphylla*, *P. pumila*, and *Thujopsis dolabrata*. The finished work will comprise not less than 85 species.—GEO. D. FULLER.

Notes on Conifers.—Two botanical memoirs by CHURCH[21] will be of interest to teachers of botany, especially those most concerned with morphology and forestry. These papers are used at Oxford in class work, making it unnecessary for the students to take lecture notes, and, at the same time, furnishing very complete outlines for laboratory work. Both papers lay emphasis upon features which can be seen without a compound microscope, although the microscope is used for some details of the life history. The first paper is

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[20] MIYABE, KINGO, and KUDO, YUSHUN, Icones of the essential forest trees of Hokkaido. 10.5×15 inches. Sapporo. Pub. by the Hokkaido government. Fasc. 1.1–15. *pls 1–4*. 1920; Fasc. 2.16–26. *pls. 5–7*. 1920; Fasc. 3.27–37. *pls. 8–10* 1921.

[21] CHURCH, A. H., Elementary notes on Conifers. Botanical Memoirs. no. 8. Oxford University Press. pp. 32. 1920.

———, Form factors in Coniferae. Botanical Memoirs. no. 9. Oxford University Press. pp. 28. 1920.

more elementary and would be used by students who have had only a general course in botany. The second paper is more advanced and could be appreciated only by students who have some previous knowledge of Gymnosperms.—C. J. CHAMBERLAIN.

Indian Botanical Society.—A notable botanical movement in India is the recent organization of "The Indian Botanical Society," whose aims, constitution, and list of members have just been published for distribution. It is stated briefly to be "a society for uniting the botanists and promoting the botanical interests of India." A more detailed statement of aims is to improve the quality and content of botanical instruction, to encourage and promote research, to provide a central exchange, and to make available to members the scattered and insufficient botanical literature that reaches India. The president is WINFIELD DUDGEON of Ewing Christian College, Allahabad City, and the other officers, three of whom are Indians, represent other institutions. The society begins with 85 members, representing 10 provinces of India.—J. M. C.

African veld.—In a description of the vegetation of South Africa, POLE-EVANS[22] uses the term "veld" to include all the native vegetation ranging from a rich forest on the southeastern coast to a desert in the interior Karroo. He covers the ground as in a former article noted in this journal,[23] but with more emphasis on the economic resources and possibilities of each region. The nineteen divisions into which he divides the region possess rainfalls ranging from zero to 70 inches per annum, while the diversity in vegetation is correspondingly great. This diversity is made evident by excellent illustrations, as well as by lists of species and the enumeration of resources of timber, fibers, gums, and fruits in addition to the forage plants.—GEO. D. FULLER.

Embryogeny.—SOUÈGES,[24] in continuation of his numerous detailed studies of the embryogeny of various families of seed plants, has reported his results for *Urtica pilulifera*, *Senecio vulgaris*, four species of *Rumex*, and a species of *Rheum*. The details are too numerous to recite, but the excellent figures present the facts clearly for those using such data.—J. M. C.

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[22] POLE-EVANS, I. B., The veld: its resources and dangers. So. African Jour. Sci. **17**:1–34. *figs. 56*. 1920.

[23] BOT. GAZ. **66**:539. 1918.

[24] SOUÈGES, RENE M., Embryogénie des Urticacées. Dévelopement de l'embryon chez *l'Urtica pilulifera*. Compt. Rend. **171**: no. 21. 1920.

———, Embryogénie des Composées. Les premiers stades du développement de l'embryon chez le *Senecio vulgaris*. Compt. Rend. **171**:254. 1920.

———, Embryogénie des Composées. Les dernier stades du développement de l'embryon chez le *Senecio vulgaris*. Compt. Rend. **171**:1920.

———, Recherches sur l'embryogénie des Polygonacées. Bull. Soc. Bot. France IV. **20**:1–11, 75–85. 1920.